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Introduction

One of the prerequisites for funded research is dissemination, something that practitioners often find particularly hard. Without dissemination, without being able to identify innovation in a particular area, practitioners spend a great deal of time reinventing the wheel. Alarmingly, we discovered in the course of the research for *Architects and Research Based Knowledge*, that architects were more likely to consult the person at the next door desk or Google than they were to use the rigorous impartial findings of academic or funded research.[1] To devote a special edition of *The Journal of Architecture* to the cause of developing research in architectural practice by showcasing the work of the RIBA President's Awards for Research is therefore a significant moment in improving the way the profession celebrates and shares its knowledge for reasons I will outline below. As more refereed literature becomes freely available online and the industry press becomes more explicitly a newsfeed it is hoped that more and more architects will start using high-quality research as the basis of their activities.

Research culture of architects

The RIBA, with members, chapters and schools across the world, is a 'global assemblage', meaning there is continual flow between local-situated conditions and the wider international context.[2] The UK architecture profession provides a useful case for the study of research in practice as the pressures of the UK university Research Assessment exercises, introduced in 1986 and now becoming more widespread globally, have forced UK architects, particularly practitioners in an academic context, to explain what it is that they do. That architects, particularly SME (Small and Medium Enterprises) practices, are erratic in the way that they organise their knowledge is becoming increasingly wellknown[3] and relates to a marked lack of business planning in the profession more widely.[4] In 2012, as part of the Arts and Humanities Research Council (AHRC) funded *Home Improvements* project, the RIBA undertook a survey of research in practice that revealed that 43% of practitioners believed themselves to be doing research, while the rest believed that research, was a good thing both for business and for satisfaction but were unsure as to how to begin.[5] The practitioners who were questioned generally associated research with energy and performance or with the more esoteric aspects of theory. For them it had little relationship to the way in which reflective practitioners try to make better buildings that are appropriate to their users, clients and context.

The knowledge base of architects

'"Knowledge", as Frank Duffy, former President of the RIBA and Director of the practice DEGW has saliently pointed out, 'is not a word with which most architects instinctively feel very comfortable

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as a way of describing the essence of their discipline',[6] despite the fact that architectural practices are seen from the outside as the 'archetype' of knowledge-based organisations.[7] For Duffy it is vital that architects make the 'special features' of their profession extremely clear: 'This means defining architectural knowledge in a way that is verifiable, open to scrutiny and sufficiently robust to distinguish it from other kinds of knowledge'.[8] It also means aligning architectural conceptions of research rigour and excellence with that of other fields.[9]

Architects are known for borrowing research approaches from other fields so it was a refreshing moment when the European Association of Architectural Educators drew up a charter acknowledging that the discipline has distinct methodologies of its own.[10] Drawing on organisational studies of knowledge transfer, I argue that architects have a particular skillset in the making of 'boundary objects' — models, drawings, reports—that translate knowledge from one community to another.[11] Although it may seem like a truism, the unique methodological offering of architects is 'design studio' in which knowledge is generated in an open and inclusive way, and boundary objects at a variety of different scales are adjusted accordingly. This, as architects know, is an excellent way of generating democratic solutions and is therefore well suited for tackling social/spatial challenges. It is odd therefore how absent architects are from the burgeoning debate on urban living laboratories for social and environmental change.[12] However, others in the social sciences are cottoning on to the value of design studio. An example is Kate Pahl's use of an architecture studio-based methodology for her AHRC funding project *Co-producing Legacy*.[13] New approaches based on architectural design studio are becoming mainstream within the field of management as a means of driving innovation.[14] It is also notable that the value of 'design thinking' is receiving widespread acknowledgement and support within the creative economy,[15] but is rarely associated with the activities of architects. Design studio urgently needs to be reframed and disseminated as a research methodology with wide interdisciplinary applicability. It also needs to be disaggregated from the services of architects as described in the *RIBA Plan of Work* and given the status and fees that design thinking is given in other fields.[16]

The business case for research in practice

Research can bring multiple business benefits to practices including: new income streams; the development of new services and products; strategic focus and resilience; staff satisfaction and retention; an enhanced practice brand.[17] As the forthcoming Report *Pathways to Post Occupancy Evaluation* shows there is an increasing client appetite for research. Businesses such as Marks and Spencer are fully aware just how useful the data derived from Post-Occupancy Evaluation is for moulding future business strategy.[18]

Some of the most innovative and business-savvy clients are using performance 'base and stretch' targets as the basis of procurement, as is common in many other industries. In this situation the entire construction team is rewarded for performance, defined in various ways, at the highest level. If, as seems likely, performance-based contracts become

more mainstream, architects will have to become adept in performance evaluation.

Practitioners fund their research in a wide variety of ways but need support in applying for funding through formal channels such as the research councils. The book *Demystifying Architectural Research* was, in part, written to encourage UK practitioners to bid for the 80 billion euros of Horizon 2020 funding currently available through Europe to address what they call the grand societal challenges, wellbeing, energy and so on—clearly within their terrain. Another important source of funding is to be found in Knowledge Transfer Partnerships funded by Innovate UK with the precise aim of fostering industrial and academic collaboration. The process of application involves considerable feedback from the funding body and can therefore be an important source of learning but it does require investment from the practice; however, there are many more.

Models of research practice collaboration

Back in the 1970s the editors of *Architectural Research and Teaching,* based in the RIBA Research Group, made a strong case that 'Model solutions to the problem of linking research and design should be developed.'[19] Slowly but steadily new ways to bring research and design together, particularly in the form of practice/academia collaborations have begun to evolve with the increasing recognition that there is 'a new role for academia to link up with practice in order to carry out an archaeology of the processes of architectural production in a non-threatening but critical manner'. [Till, 2007, p.4].

The success of Gehl Architects, based in Copenhagen, is emblematic of what is possible when practitioners and academics work together. Their distinct research methodology for mapping city space in use outlined in the book *How to Study Public Life* was developed with students and academics at the Royal Danish Academy of Fine Arts through the process of teaching. Gehl's research methodologies are now perceived by government and business as an important tool to create 'user friendly urban development'[20] and are being utilised worldwide, most notably through the creation of the new Gehl Institute in New York.

Clearly a potent way to incentivise practice-academic collaboration is through funded research projects and an increasing amount of practices are drawing on such funding, usually through the auspices of an academic Principal Investigator who is instrumental in winning the bid. Success in such a project requires a 'mature' relationship with the academic institution, so a part-time position within that institution is helpful as the complexities of winning research funding are several and they are the kind of complexities for which the architecture profession is largely unprepared. An example of a recent funded project is Sarah Wigglesworth Architect's leading role in the Engineering and Physical Science Research Council (EPSRC) Dwell project on design for an ageing population, a collaboration with the University of Sheffield and Sheffield City Council. This project was strategically developed in line with a practice ambition to lead in the provision of design for old people and to position the practice as expert in this area. As 'Principal Investigator' on the project Wigglesworth had the major responsibility for sorting the technical complexities of the bid; a more straightforward route to

funding for most architects is as a Co-Investigator delivering one of several work packages. One of the key outputs, the Report *Designing with Downsizers*, is a remarkable testimony to the power of research practice.[21]

Competitions, a familiar format for architectural innovation, could and should be used better as a forum for developing and collating collective research. A particularly laudable model is offered by the Netherlands professional institute of architecture the BNA. The Institute identifies a research problem and then asks stakeholders in that problem to contribute money to a research fund for the exploration of that issue. A competition, a format with which architects are familiar, is opened up to the profession for research funding and a practice or a series of practices are then paid to develop Design Research solutions to the matter in hand. In this way the BNA has tackled a range of issues such as the use of dykes, the reuse of Northern schools in areas of shrinking population and 'nesting in the city'. The results, written up as reports, are then made freely available to members of the BNA.[22]

A rather more laborious and expensive but tailor-made way of integrating practitioner and academic research is through the development of the practice-based PhD undertaken part- or full-time through practice. Architecture schools with established PhD programmes such as Sheffield or University College London in the UK have accepted practitioner PhDs for many decades resulting in an increasing number of PhDs 'by design' as well as other more traditional formats.[23] A benefit of the part-time PhD for practitioners is that it opens up the route for the development of research funding. It also provides intellectual stimulation and makes way for all sorts of new partnership activities.

Another way to foster research in practice is through the development of networks of support and mentoring, a need which is particularly acute for small and micro-practices who need to share resource and knowledge to compete with others. Continuing Professional Development (CPD) is an important format for alerting practitioners to the potential of research. The London-based Research Practice Leads group, the first meeting of which took place at the offices of Hawkins/Brown in the summer of 2016, provides a good example of a bottom-up network.[24] The aim of the group is to develop and raise the profile of practice researchers who in some cases were worried about being an 'overhead' likely to be dispensed with at the next recession. Sexton and Barrett have shown the impact a single individual can have on innovation within small construction firms,[25] so perhaps the first stage in changing professional culture is to ensure that all practices have a research champion with the power to make research desirable.

Universities also have an important role to play in kick-starting Open Source innovation by opening their digital fabrication workshops to small businesses, including the Architecture micro-practices which form such a large part of the profession across Europe. Fablabs offer another opportunity for integration across practice and academia, as can be seen at the Sliperiet at Umeå University in Sweden, a freely available space open to the public, research and industry alike.

Developing the research culture of architects

Models of change deriving from Management and Leadership research are useful in considering how we might shift architectural culture towards evidencing value. Kotter, in his pragmatic staged model, lists eight stages in the process:

1. Establishing a sense of urgency.
2. Creating the guiding coalition.
3. Developing a vision and strategy.
4. Communicating the change vision.
5. Empowering broad-based action.
6. Generating short-term wins.
7. Consolidating gains and producing more change.
8. Anchoring new approaches in the culture.[26]

A motion was taken to the RIBA's Council in December, 2015, 'communicating the change vision', which anchored research and innovation into the heart of RIBA strategy up until 2020.[27] We are now in the middle of Stage 5, *Empowering broad-based action*, an effort that links colleagues and initiatives across the globe.

The RIBA Research and Innovation Group is a body which has been in existence in various guises for almost as long as the RIBA. The long-term objective of the Group has been to raise the level of research in practice, the President's Awards for Research and RIBA research funding being an important means of doing so.[28] The recent reconfiguration of the RIBA President's Medal for Research into thematic strands based on comparable methodology types is a move that emerged out of the AHRC 'Cultural Value of Architects in Homes and Neighbourhoods' (CVoA) project, in which it became apparent that in order to corral evidence about the value of architects it was first necessary to establish a series of value types as a means of categorization: social, cultural and commercial.[29] Orderings are always culturally and temporally specific and therefore need to be constantly evolving and under review.[30] Such was the case for the CVoA 'Architect Types and Skillsets' which were tested with a wide variety of audiences and in a wider variety of circumstances: for example, the teaching of the 'ARC 101' lecture module at the University of Sheffield, with secondary school students in the Sheffield University School of Architecture Live Lab and in CPD sessions at architectural practices.

A version of the CVoA types which included the category 'technology' was used to cluster together exemplars of practice research in the book *Demystifying Architectural Research*, the essential aim of which was to show that architects all over the UK are continually doing research even if they do not always see it that way. This was done by working closely with the practitioners who provided case studies to translate their research work in practice into the standard format of a research project—the terms 'aims', 'context', 'approach', 'lessons' and so on were used as avatars for the globally recognised research language of 'aims', 'research context', 'methodology' and 'findings'. Research case studies from practices all over the UK were clustered together under the headings 'social', 'technical', 'cultural' and 'commercial', each with an introductory chapter written by an expert to contextualise the work therein. Examples of studies included the

work of the Northern Ireland based sole practitioner Jane Burnside whose research, developed over many years, has been into developing a process for working with domestic clients and, at the other end of the practice-size spectrum, Chris Halligan's RIBA research award-winning work on categorising sustainable building materials for use in commercial situations.

Conclusion

All this goes to show why the publication of the winners of the RIBA Research Awards in this Journal and the collation of research by other contenders for use by the wider community on the RIBA website architecture.com is a significant moment for the development of architectural research in the UK and worldwide: it is worth noting the extraordinary global reach this year. This special edition of *The Journal of Architecture* adds to the knowledge developed in a succession of recent books and reports such as *The Changing Shape of Practice,*[31] *Demystifying Architectural Research* and the *RIBA Home Improvements: Report on Research in Housing Practice*[32] which have used case studies to celebrate and articulate practice research in the normative language of research in this way making it more intelligible, rigorous and useful while contributing to the global impetus of architectural knowledge.

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